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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,848	02/09/2004	Haixin Yang	EL0542USNA	1063

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E I DU PONT DE NEMOURS AND COMPANY
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BARLEY MILL PLAZA 25/1128
4417 LANCASTER PIKE
WILMINGTON, DE 19805

EXAMINER	
SHOSHO, CALLIE E	

ART UNIT	PAPER NUMBER
1714	

MAIL DATE	DELIVERY MODE
04/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 10/775,848	**Applicant(s)** YANG, HAIXIN	
	Examiner Callie E. Shosho	**Art Unit** 1714	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 14 March 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires *4* months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: *see attachment*. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: *1-6 and 8-17*.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

Callie E. Shosho
Primary Examiner
Art Unit: 1714

Attachment to Advisory Action

1. Applicant's amendment filed 3/14/07 has been fully considered, however, the amendment has not been entered given that the amendment raises new issues that would require further consideration and search.

Specifically, the amendment raises new issues that would require further consideration and search in light of the amendment to claim 1 which now requires "the conductive functional material has an average particle size (D_{50}) of 0.1 to 1.2 microns". Given that previously the claim required average particle size (D_{50}) of greater than 0.1 microns to 1.2 microns, the amendment clearly broadens the scope of the claims with respect to the average particle size of the conductive functional material. Such broadening of the scope of the claims clearly raises new issues that would require further consideration and search. Additionally, the amendment raises new issues that would require further consideration given that if the amendment were entered, new grounds of rejection would need to be set forth with respect to Hirai et al. (U.S. 2003/0146019) given that Hirai et al. would now be applicable against present claims 1, 4-6, 11-13, and 15-16 under 35 USC 102(e) not 35 USC 103.

It is noted that even *if* the amendment filed 3/14/07 were entered, the present claims would not be allowable over the cited prior art of record for the following reasons.

Applicant argues that DE 19846096 is no longer a relevant reference against the present claims in light of the amendment to claim 1 to recite "wherein the conductive functional material has an average particle size (D_{50}) of 0.1 to 1.2 microns".

However, it is noted that DE 19846096 discloses that the conductive material has average primary particle size of 100 nm which clearly overlaps the presently claimed average particle size. Even though the overlap is only at one point, the fact remains that there is overlap. DE 19846096 also discloses that the conductive functional material is in the form of agglomerates that possess average particle size of less than 500 nm (col.3, lines 13-14 and 21-25) which also clearly overlaps the average particle size presently claimed. Thus, both the primary particle size and the agglomerate particle size of the conductive functional material of DE 19846096 overlap the average particle size presently claimed.

Thus, it is clear that the conductive functional material of DE 19846096 does possess average particle size as presently claimed and therefore DE 19846096 remains a relevant reference against the present claims.

Applicant also argues that Kodas et al. (U.S. 2003/0175411) is not a relevant reference against the present claims given that Kodas et al. disclose the use of conductive material that is nano-sized particles mixed with precursor composition while applicant's claims are directed to jet composition with large particles and low viscosity.

However, attention is called to paragraphs 31-32 of Kodas et al. that disclose that the conductive material is in the form of microparticles possessing average particle size of at least about 0.1 μm, preferably 0.3 – 3 μm, which clearly meets the requirements in the present claims with respect to particle size. Further, attention is called to paragraph 349 of Kodas et al. that discloses that the composition has viscosity of not greater than 50 cP such as 10 to 40 cP which clearly meets the requirements in the present claims regarding the viscosity. Further, while it is

agreed that the composition of Kodas et al. is a precursor composition, there is nothing in the scope of the present claims which excludes the use of such composition. The present claims are drawn to ink jet printable composition. Given that paragraphs 298 and 325-326 of Kodas et al. disclose that the composition is printed onto substrate using ink jet printer, it is clear that the precursor composition of Kodas et al. is ink jet printable as presently claimed.

Applicant also argues that the presently claimed conductive materials are not metal precursors and that Kodas et al. is not ink jetting the conductive material of the present invention but rather is ink jetting a precursor solution.

Given that Kodas et al. disclose the use of conductive material identical to that utilized in the present invention, i.e. silver, gold, copper, etc., as well as explicitly disclose the use of conductive metal oxides, it is clear that regardless of what Kodas et al. refers to such materials as, including metal precursors, they are identical to the conductive material presently claimed.

Further, while it is agreed that Kodas et al. disclose ink jetting a precursor solution (paragraph 298 and 325-326), however, this precursor solution contains conductive material as presently claimed (paragraphs 28 and 31-32). Attention is drawn to paragraph 78 that discloses that the conductive material, i.e. particulates, are deposited onto the substrate. Additionally, while the precursors are reacted using various gases to convert the precursor, this conversion appears to happen after the metal precursor, i.e. conductive material, is jetted onto the substrate (paragraphs 347-349 and 371). Thus, it is not clear why applicant argues that Kodas et al. do not ink jet the conductive material. Clarification is requested.

Applicant also argues that Hirai et al. is not a relevant reference against the present claims given that Hirai et al. do not disclose conductive material with average particle size as presently claimed.

Firstly, it is noted that *if* the amendment filed 3/14/07 were entered, Hirai et al. would be applied against present claims 1, 4-6, 11-13, and 15-16 under 35 USC 102(e) not 35 USC 103. Further, it is noted that Hirai et al. disclose that the conductive material possesses average particle size of 1-100 nm which clearly overlaps the presently claimed average particle size. Even though the overlap is only at one point, the fact remains that there is overlap.

Thus, it is clear that the conductive functional material of Hirai et al. does possess average particle size as presently claimed.

Applicant also argues Hirai et al. is no longer a relevant reference against the present claims given that claim 1 now requires maximum particle size of the conductive material is 5 μm or less which is different than that of Hirai et al.

However, it is noted that no such amendment has been made to claim 1 and thus, it is the examiner's position that Hirai et al. remains a relevant reference against the present claims.

Applicants also argue that there is no motivation to utilize Tucker et al. (U.S. 2003/0119943) in combination with Adkins et al. (U.S. 6,379,444).

However, it is noted that as set forth in paragraph 15 of the office action mailed 11/22/06, Tucker et al. is no longer utilized against the present claims.

It is further noted that *if* the amendment filed 3/14/07 were entered, the amendment would overcome the 35 USC 112, first paragraph rejection of record, the 35 USC 103 rejection of record utilizing DE 19846096, and the 35 USC 103 rejections of record utilizing Hirai et al., however, it is noted that Hirai et al. would be applied against the present claims under 35 USC 102(e).

Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
3/27/07